

# **FACT SHEET FOR STATE WASTE DISCHARGE PERMIT NO. ST-9255**

## **Pearrygin Lake State Park-West**

### **SUMMARY**

Pearrygin Lake State Park is a state-owned public park located on the northwest corner of Pearrygin Lake, approximately three miles northeast of Winthrop, in Okanogan County. The park was recently expanded with the purchase of Derry's Resort located west of the existing park. The park is now divided into Pearrygin East and Pearrygin West. The Park provides overnight accommodation for campers and recreational vehicles (RVs).

The Park is operated during the spring and summer months, when the lake is open for fishing, and during the hunting season. Following purchase of the resort, the State Parks Department redesigned the camping and RV parking configuration that resulted in an approximately 40% reduction in camping/parking sites. Wastewater from the park is generated by: comfort stations; park office; a small laundromat; 82 campsites, with and without water supply; three cabins; and 40 recreational vehicle (RV) campsites with sewer hookups. The RV hookups are the primary source of wastewater.

The wastewater treatment facilities at Pearrygin Lake West were originally built as a septic tank and drainfield type of treatment for Derry's Resort. Facility upgrading, designed in 1986 and completed in 1989, replaced the original facilities with: (1) a larger (21,600 gallon) two-stage centrally-located septic tank and pump station; and (2) stabilization and evaporation/infiltration ponds.

This permit requires the Permittee to: comply with pH effluent limitations; monitor the wastewater discharge and lagoon system for various parameters; submit Discharge Monitoring Reports to the Department in a timely manner; and, submit an Operations and Maintenance Manual.

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## **INTRODUCTION**

This fact sheet is a companion document to State Waste Discharge Permit No. ST-9056. The Department of Ecology (the Department) is proposing to issue this permit, which will allow discharge of wastewater to waters of the State of Washington (State). This fact sheet explains the nature of the proposed discharge, the Department's decisions on limiting the pollutants in the wastewater, and the regulatory and technical bases for those decisions.

Washington State law (RCW 90.48.080 and 90.48.162) requires that a permit be issued before discharge of wastewater to waters of the state is allowed. Regulations adopted by the State include procedures for issuing permits (Chapter 173-216 WAC), technical criteria for discharges from municipal wastewater treatment facilities (Chapter 173-221 WAC) and water quality criteria for ground waters (Chapter 173-200 WAC). They also establish the basis for effluent limitations and other requirements which are to be included in the permit.

This fact sheet and draft permit are available for review by interested persons as described in Appendix A--Public Involvement Information.

The fact sheet and draft permit have been reviewed by the Water Reclamation and Reuse Program of the Washington State Department of Health and by the Permittee. Errors and omissions identified in these reviews have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Changes to the permit will be addressed in Appendix C--Response to Comments.

GENERAL INFORMATION	
Applicant	Washington State Parks Department, David M Jaquish
Facility Name and Address	Pearrygin Lake State Park 861 Bear Creek Road Winthrop, WA 98862-9801
Type of Treatment System:	A two-stage septic tank followed by one secondary stabilization pond and two evaporation/infiltration ponds.
Discharge Location	Latitude: 48° 30' 06" N Longitude: 120° 09' 16" W.
Legal Description of Application Area	Section 25, Township 35 N, Range 21 E. W. M.
Contact at Facility	Name: Rick Lewis Title: Park Manager Address: Same as above Telephone : 509-996-2370

## BACKGROUND INFORMATION

### FACILITY DESCRIPTION

Pearrygin Lake State Park is operated from April 15<sup>th</sup> to October 15<sup>th</sup>, when the lake is open for fishing, and during the hunting season. Wastewater from the park is generated by: comfort stations; park office; a small laundromat; 82 campsites, with and without water supply; three cabins; and 40 recreational vehicle (RV) campsites with sewer hookups. These RV hookups generate the primary source of wastewater.

The wastewater collection system, a two-chamber septic tank, and a pump station are located within the park site near the lake. The lagoon system is located to the north of the park and on the crest of a hill.

The treatment facility is classified as a Class I privately-owned wastewater treatment facility. It is typically operated by no less than a Group II certified operator.

## **Collection and Treatment Systems**

The wastewater treatment facilities at Pearrygin Lake West were originally built as a septic tank and drainfield type of treatment. Facility upgrading, designed in 1986 and completed in 1989, replaced the original facilities with: (1) a larger (21,600 gallon) two-stage centrally-located septic tank and pump station; and (2) stabilization and evaporation/infiltration ponds.

Domestic wastewater is centrally collected in a two-stage septic tank and pumped by either one or two 10-HP pumps through a 3-inch diameter line to three 0.11-acre treatment/disposal ponds located on a crest of a hill, approximately 175 feet above and 3/4 mile north of the lake.

The three treatment/disposal ponds are comprised of one stabilization and two evaporation/infiltration ponds, located within a fenced area at an elevation of about 1900 feet. The hilltop location and soil conditions appear to satisfactorily: (1) prevent overflows by minimizing stormwater inflow; and (2) minimize ground water contamination by a lengthy percolation route through sandy soil.

The clay-lined stabilization pond (Cell #1) receives septic tank effluent, and was designed to operate at a loading of 74.0 lbs BOD/acre/day. Peak daily influent flow is rated at 21,185 gpd, while the average monthly flow is rated at 14,400 gpd. The evaporation/infiltration ponds (Cells #2 and #3) receive effluent from the stabilization pond, and were designed to percolate at a rate of 1.15 gallons/sq.ft./day over their 4,900 sq.ft. bottom areas (or 1.85 inches/day). Additionally, these ponds are valved so that they both can be operated either in series or parallel; or with one or the other out-of-service.

With the reduction in available camp sites, RV hook-ups and water conservation measures instituted by the Department of Parks, the overall wastewater flow and strength to the lagoons is expected to be considerably reduced from loadings while under Derry's ownership.

## **Revamping Derry's Resort to a State Park**

Following the State purchase of Derry's Resort, the Department of Parks replaced worn pumps, rewired the lift station and replaced the existing steel lift station lids with aluminum ones. The Parks Department also reduced the number of RV hookups to 40 and campsites were reduced from 167 to 82. What was once the general store at Derry's is now the manager's office. There are also three cabins available for rent. At present only two are available. A third cabin is expected to be available in the near future following remodeling.

## **Residual Solids**

The treatment facilities remove solids during the treatment of the wastewater at the headworks (grit and screenings), in addition to incidental solids (rags, scum, and other debris) removed as part of the routine maintenance of the equipment. Grit, rags, scum and screenings are drained

and disposed of as solid waste at the local landfill. The lagoon bottoms have never been cleaned of accumulated sludge. The last inspection in 2005 found very little accumulation.

## **SITE SOILS AND GROUND WATER**

The engineering report (ER) states that soils at the lagoon site consist of uniform, deep, and well-drained gravelly loams of the Newban Series that were formed in glacial till. The percolation rate for this soil ranges from 0.60 to 2.0 inches per hour.

A test hole was excavated to a depth of 8 feet on April 22, 1986 at the lagoon site prior to construction. Soils were physically characterized by sieve analysis of samples from four depths. Ground water was not observed in the testhole, and there was no evidence of seasonal high ground water levels.

The ER states that it was apparent from examination of the test hole and the sieve analysis results that the more permeable subsoil layers (classified as coarse sand) begin at a depth of at least four feet. As a result, a minimum of four feet of topsoil was removed when the lagoons were constructed.

## **PERMIT STATUS**

This is a new permit as ownership of the park was transferred from a private owner, who operated the park under the name of Derry's Resort, to the Washington State Parks-Eastern Region.

An application for a permit was submitted to the Department on March 11, 2005 and accepted by the Department on the same day.

A compliance inspection without sampling was conducted on May 26, 2005 and the operation was in good order.

## **WASTEWATER CHARACTERIZATION**

The concentration of pollutants in the discharge was reported in the permit application. Concentrations are based on samples taken by the previous permit holder from April 2000 through, September 2004 from the septic tank discharge pipe. It is expected, due to a 50% reduction in available campsites, a 70% reduction in RV stalls instituted by the Parks Department, and water saving measures, that the loading will diminish.

**Table 1: Wastewater Characterization with Percent of Design Criteria**

Parameter	Loading	Percent of Design Criteria
Flow, average for maximum month	4,463.5 gpd	31
Flow maximum day	10,304 gpd	49
BOD <sub>5</sub> average	6.5 lbs/Day @ 233 mg/L	51
BOD <sub>5</sub> maximum day	11.9 lbs/Day @ 350 mg/L	47.4
TSS average	2.2 lbs/Day @ 64 mg/L	N/A
TSS maximum day	4.6 lbs/Day @ 60 mg/L	N/A
pH range	7.8 to 8.3	N/A

### **PROPOSED PERMIT LIMITATIONS**

State regulations require that limitations set forth in a waste discharge permit must be either technology- or water quality-based. Wastewater must be treated using all known, available, and reasonable treatment (AKART) and not pollute the waters of the State. The minimum requirements to demonstrate compliance with the AKART standard are derived from the *Water Reclamation and Reuse Interim Standards*, the *Design Criteria for Municipal Wastewater Land Treatment*, and Chapter 173-221 WAC.

This permit contains limitations on the quality of the wastewater applied to the infiltration/evaporation ponds that have been determined to protect the quality of the ground water. The approved engineering report includes specific design criteria for this facility. Design criteria for BOD loading rates of the lagoon system are contained in Special Condition S4.A of this permit. Water quality-based limitations are based upon compliance with the Ground Water Quality Standards (Chapter 173-200 WAC).

### **GROUND WATER QUALITY-BASED EFFLUENT LIMITATIONS**

In order to protect existing water quality and preserve the designated beneficial uses of Washington's ground waters including the protection of human health, WAC 173-200-100 states that waste discharge permits shall be conditioned in such a manner as to authorize only activities that will not cause violations of the Ground Water Quality Standards. Drinking water is the beneficial use generally requiring the highest quality of ground water. Providing protection to the level of drinking water standards will protect a great variety of existing and future beneficial uses.

Applicable ground water criteria as defined in Chapter 173-200 WAC and in RCW 90.48.520 for this discharge include the following:

**Table 2: Ground Water Quality Criteria**

Parameter	Criteria
Total Coliform Bacteria	1 Colony/ 100 mL
Total Dissolved Solids	500 mg/L
Chloride	250 mg/L
Sulfate	250 mg/L
Nitrate	10 mg/L
pH	6.5 to 8.5 standard units
Manganese	0.05 mg/L
Total Iron	0.3 mg/L
Toxics	No toxics in toxic amounts

The location of the wastewater lagoons are on the top of a hill, which, because of its location high above the water table, the Department believes drilling a well is impractical and too costly to determine if background ground water quality is either higher or lower than the criteria given in Chapter 173-200 WAC; therefore, this permit will use the criteria expressed in the regulation. The discharges authorized by this proposed permit are not expected to interfere with beneficial uses.

Best Professional Judgment (BPJ) has determined that the wastewater treatment facilities at Pearrygin Lake State Park will have no reasonable potential to violate the State's Ground Water Quality Standards, when operated in accordance with: (1) the design criteria given above; (2) normal operational guidelines for septic tanks and stabilization ponds; and (3) normal routine maintenance. Additional factors which support the "no reasonable potential" BPJ determination include:

- (1) Sewage type - domestic and easily treatable by the treatment facilities;
- (2) Sewage quantity - within the design capacity of both the primary and secondary treatment facilities;
- (3) Discharge variability - within the design capacity of both the primary and secondary treatment facilities;
- (4) Treatment method - primary treatment (septic tank) followed by secondary treatment (stabilization pond);
- (5) Location of treatment facilities - ponds located atop a 175-foot high hill of sand (sand filtration);



- (6) Significance of potential pollutants - no significant potential pollutants except for pH; and

Therefore, the only resultant pollutant effluent limit to be contained in the proposed permit will be the following:

<u>Parameter</u>	<u>Limit</u>
pH	6.5-8.5

Due to the treatment/disposal design of direct evaporation and percolation, the above effluent limit shall be required of the contents of the treatment/disposal ponds (Cells #1, #2 and #3) rather than the testing of an actual effluent wastestream. This permit requires monitoring of pond depth, and sludge depth in each treatment cell.

#### COMPARISON OF LIMITATIONS WITH THE PREVIOUS PERMIT

**Table 4: Comparison of Previous and New Limits**

Parameter	Existing Limits		Proposed Limits	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
Flow, in MGD	0.01443	0.02120	Not Applicable	
pH, in S. U.'s	Between 6.5 and 8.5		Between 6.5 and 8.5	

The previous permit contained flow limitations based on hydraulic loading design criteria detailed in the approved engineering report. This permit does not contain flow limitations because these values are more appropriately contained in Special Condition S4.A.

#### MONITORING REQUIREMENTS

Monitoring, recording, and reporting are specified to verify that the treatment process is functioning correctly, that ground water criteria are not violated, and that effluent limitations are being achieved (WAC 173-216-110).

## **EFFLUENT MONITORING**

The monitoring and testing schedule is detailed in this permit under Special Condition S2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring. With an approximate 70% reduction of available camping and RV hook-up spaces that accompanied the take over of the park by the State, and given that under the former ownership loadings in comparison to the design criteria were historically below 50% the Department believes BOD loading is not an issue at this time and therefore will require BOD monitoring be limited to the Memorial Day, 4<sup>th</sup> of July and Labor Day weekends in order to monitor loadings in comparison to the design treatment criteria of the wastewater treatment system.

## **GROUND WATER AND VADOSE ZONE MONITORING**

In the event the Department determines at some future date that ground water monitoring or vadose zone monitoring is required at the lagoon site, the Permittee will be required to conduct a monitoring program in accordance with Special Condition S2.B. The goal of subsurface monitoring is to verify compliance with State Ground Water Quality Standards. The Permittee is encouraged to consult the Department's Central Regional Office Hydrogeologist in the development of a subsurface monitoring plan.

## **OTHER PERMIT CONDITIONS**

### **REPORTING AND RECORDKEEPING**

The requirements in Special Condition S3. are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 273-216-110). The Permittee is required to submit DMRs every quarter. DMRs must be received by the Department by the 15<sup>th</sup> of the month following completion of the reporting period, i. e., January 15<sup>th</sup>, April 15<sup>th</sup>, July 15<sup>th</sup>, and October 15<sup>th</sup>. During periods when there are no discharges from the septic tank to the lagoon system, during quarters when the park is not operating, the Permittee is required to submit DMRs with the words "no discharge" written on the form.

## FACILITY LOADING

The design criteria for this treatment facility are taken from Appendix C of the ER, approved by the Department on August 4, 1986 and prepared by James D. King & Associates, and are as follows:

Time Period	Flow, in GPD	BOD, in lbs/day	Cell 1 BOD, in lbs/acre/day	Overall BOD, in lbs/acre/day
Peak day	21,185	25.1	223	112
Peak month	14,430	12.8	114	57.1

The permit requires the Permittee to maintain adequate capacity to treat the flows and waste loading to the treatment plant (WAC 173-216-110[4]). The Permittee is required to submit an engineering report when the plant reaches 85% of its flow or influent loading capacity. For significant new discharges, the permit requires a new application and an engineering report (WAC 173-216-110[5]).

## HYDROGEOLOGIC STUDY

The Department reserves the right to require the Permittee conduct a Hydrogeologic Study in the event information becomes available that the wastewater treatment system may have impacted ground water. The Hydrogeologic Study would be based on soil and hydrogeologic characteristics and be capable of assessing impacts on ground water. The study would be prepared using *"Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems,"* Ecology 1993.

## OPERATIONS AND MAINTENANCE (O&M)

This permit contains Special Condition S5. as authorized under RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

This permit requires that a State-certified Class I operator be responsible for day-to-day operation of the treatment system. The Parks Department has contracted with the City of Twisp's wastewater treatment plant operator to oversee the Pearrygin Lake State park wastewater treatment system.

Special Condition S5.G of this permit requires the submittal of an O&M Manual for the entire wastewater collection and treatment system. The manual must also include best management

practices (BMPs) for O&M of the lagoon system and procedures for implementing wastewater monitoring required by Special Condition S2.A.

## **GENERAL CONDITIONS**

General Conditions are based directly on state laws and regulations and have been standardized for all industrial waste discharge to ground water permits issued by the Department.

Condition G1 requires responsible officials or their designated representatives to sign submittals to the Department. Condition G2 requires the Permittee to allow the Department to access the treatment system, production facility, and records related to the permit. Condition G3 specifies conditions for modifying, suspending or terminating the permit. Condition G4 requires the Permittee to apply to the Department prior to increasing or varying the discharge from the levels stated in the permit application. Condition G5 requires the Permittee to submit written notice of significant increases in the amount or nature of discharges (typically new industrial discharges) into the sewer system tributary to the permitted facility. Condition G6 requires the Permittee to construct, modify, and operate the permitted facility in accordance with approved engineering documents. Condition G7 prohibits the Permittee from using the permit as a basis for violating any laws, statutes or regulations. Condition G8 requires application for permit renewal one year (365) days prior to the expiration of the permit. Condition G9 requires the payment of permit fees. Condition G10 describes the penalties for violating permit conditions.

## **RECOMMENDATION FOR PERMIT ISSUANCE**

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, and to protect human health and the beneficial uses of waters of the State of Washington. The Department proposes that the permit be issued for 5 years.

**REFERENCES FOR TEXT AND APPENDICES**

Faulkner, S.P., Patrick Jr., W.H., Gambrell, R.P., May-June, 1989. Field Techniques for Measuring Wetland Soil Parameters, Soil Science Society of America Journal, Vol. 53, No.3.

Washington State Department of Ecology, 1993. Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems, Ecology Publication # 93-36. 20 pp.

Washington State Department of Ecology and Department of Health, 1993. Water Reclamation and Reuse Interim Standards, Ecology Publication # 93-21. 23 pp.

Washington State Department of Ecology, 1996. Implementation Guidance for the Ground Water Quality Standards, Ecology Publication # 96-02.

Washington State University, November, 1981. Laboratory Procedures - Soil Testing Laboratory. 38 pp.

## **APPENDIX A--PUBLIC INVOLVEMENT INFORMATION**

The Department has tentatively determined to issue a permit to the applicant listed on page one of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on April 20, and April 27, 2005 in the Methow Valley News to inform the public that an application had been submitted and to invite comment on the issuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) on November 2, 2005 in the Methow Valley News to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator  
Department of Ecology  
Central Regional Office  
15 West Yakima Avenue, Suite 200  
Yakima, WA 98902

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the 30 day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-216-100). Public notice regarding any hearing will be circulated at least 30 days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing.

The Department will consider all comments received within 30 days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, 509/457-7105, or by writing to the address listed above.

This permit was written by Rich Marcley.

## APPENDIX B--GLOSSARY

**Ambient Water Quality**--The existing environmental condition of the water in a receiving water body.

**Ammonia**--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

**Average Monthly Discharge Limitation**--The average of the measured values obtained over a calendar month's time.

**Best Management Practices (BMPs)**--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

**BOD<sub>5</sub>**--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD<sub>5</sub> is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

**Bypass**--The intentional diversion of waste streams from any portion of the collection or treatment facility.

**Chlorine**--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

**Compliance Inspection - Without Sampling**--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

**Compliance Inspection - With Sampling**--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

**Composite Sample**--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

**Construction Activity**--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

**Distribution Uniformity**--The uniformity of infiltration (or application in the case of sprinkle or trickle irrigation) throughout the field expressed as a percent relating to the average depth infiltrated in the lowest one-quarter of the area to the average depth of water infiltrated.

**Engineering Report**--A document, signed by a professional licensed engineer, which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

**Fecal Coliform Bacteria**--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

**Grab Sample**--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

**Industrial Wastewater**--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feedlots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

**Maximum Daily Discharge Limitation**--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

**Method Detection Level (MDL)**--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.



**pH**--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

**Quantitation Level (QL)**-- A calculated value five times the MDL (method detection level).

**Soil Scientist**--An individual who is registered as a Certified or Registered Professional Soil Scientist or as a Certified Professional Soil Specialist by the American Registry of Certified Professionals in Agronomy, Crops, and Soils or by the National Society of Consulting Scientists or who has the credentials for membership. Minimum requirements for eligibility are: possession of a baccalaureate, masters, or doctorate degree from a U.S. or Canadian institution with a minimum of 30 semester hours or 45 quarter hours professional core courses in agronomy, crops or soils, and have 5,3,or 1 years, respectively, of professional experience working in the area of agronomy, crops, or soils.

**State Waters**--Lakes, rivers, ponds, streams, wetlands, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the State of Washington.

**Stormwater**--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

**Technology-based Effluent Limit**--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

**Total Coliform Bacteria**--A microbiological test which detects and enumerates the total coliform group of bacteria in water samples.

**Total Dissolved Solids**--That portion of total solids in water or wastewater that passes through a specific filter.

**Total Suspended Solids (TSS)**--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

**Water Quality-based Effluent Limit**--A limit on the concentration of an effluent parameter that is intended to prevent pollution of the receiving water.

**APPENDIX C - RESPONSE TO COMMENTS**

No comments were received by the Department of Ecology.